Early Insights - Team C

Eric Gaudreau, Raghu Nema, Mariano Amaya, Sam Dvorin, Shangyuan Chen

Project Summary

The city of Boston is interested in a report regarding the nature of animal complaints on the city's 311 app. This includes the number of complaints, kinds of animals, distinct geographic areas where animal complaints are common, and trends in said complaints (such as season, or weather).

Key Questions We Tackled

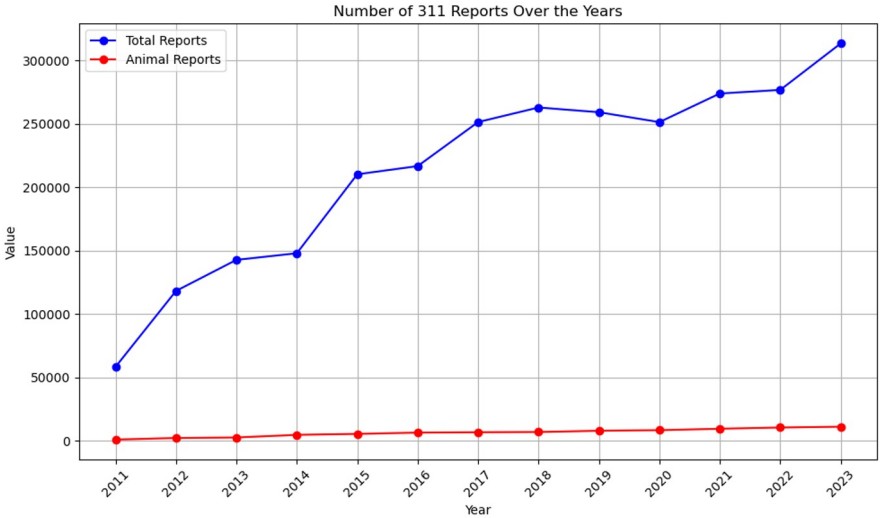
- How many reports were there in the previous 2-3 years? 5-10 years? Are there any positive or negative trends to these reports (decreasing in sum total, etc)?
- How do other factors such as season impact the nature of the complaints? (ie: are there more complaints in the summer? Winter?)

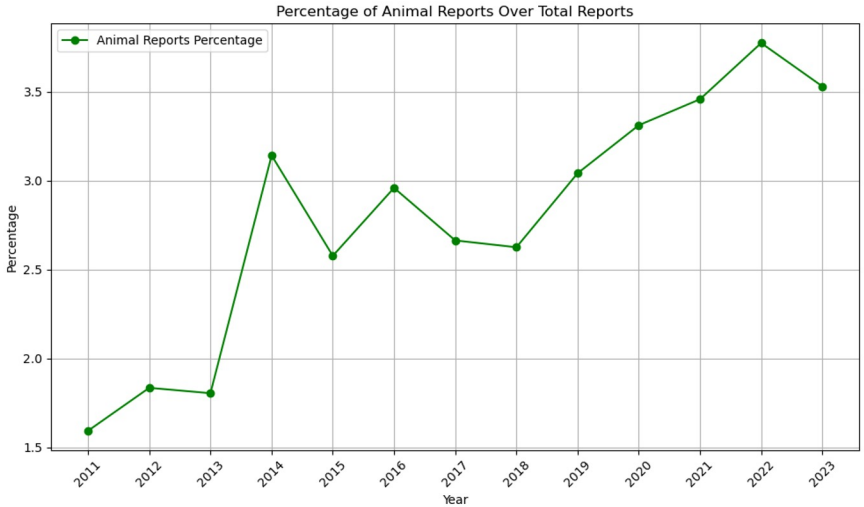
Data Source

- Analyze Boston Yearly 311 Service Requests in CSV file format (Years 2011 - 2023)
- Used Python File to Parse all Requests Relating to Animals

Link: https://data.boston.gov/dataset/311-service-requests

General Trends





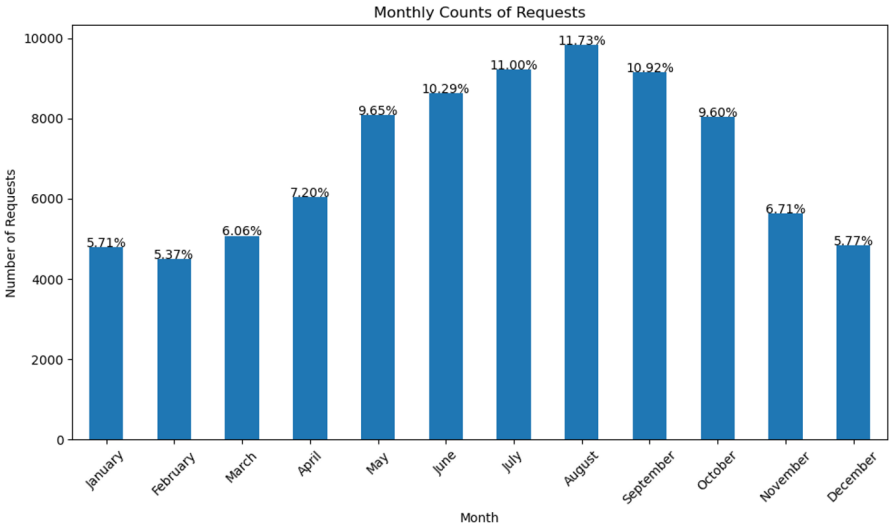
TRENDS:

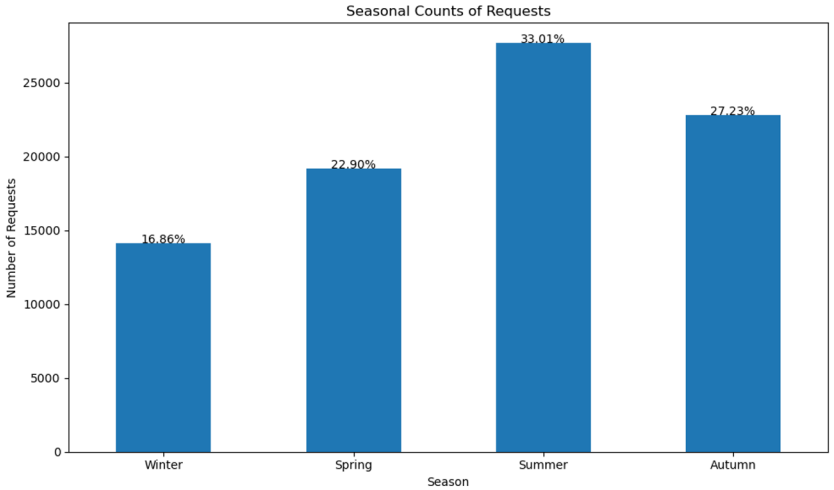
- Steady increase over the years
- Growing proportion of animal related issues within the total number of reports submitted to the city's 311 system, especially notable in recent years.

ANALYSIS: The steady increase in total reports could be due to several factors

- Growth in the population leading to more incidents being reported
- Increased awareness or ease of reporting through the 311 system

Animal Specific



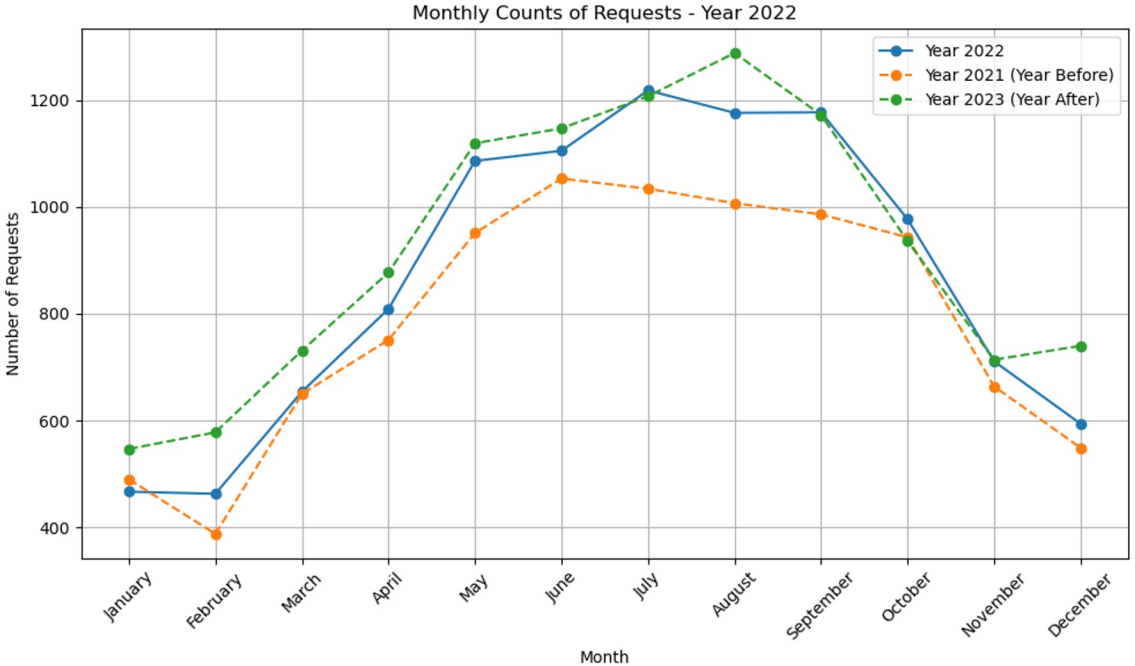


TRENDS:

- There is a peak in the amount of animal reports during the summer months

ANALYSIS:

- Increased human outdoor activity, longer days, warmer weather may lead to more sightings
- Animals may exhibit heightened activity levels during the summer, such as breeding or foraging behaviors, causing encounters with humans.

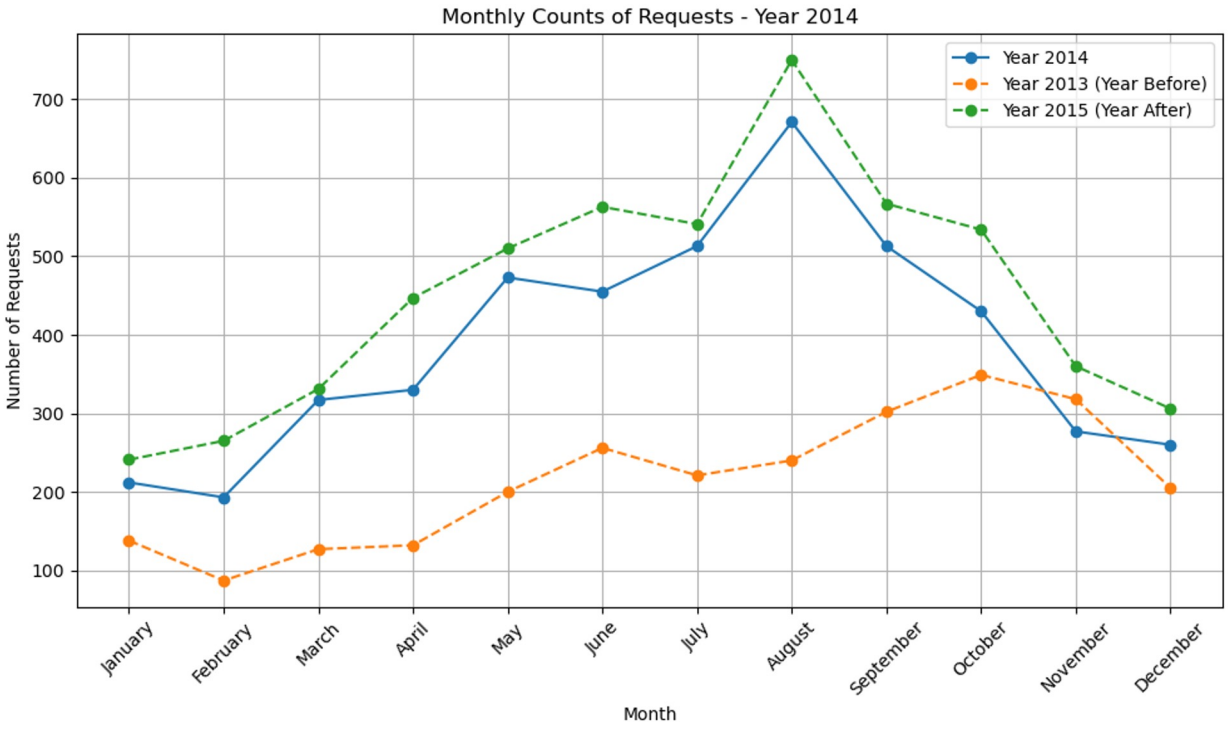


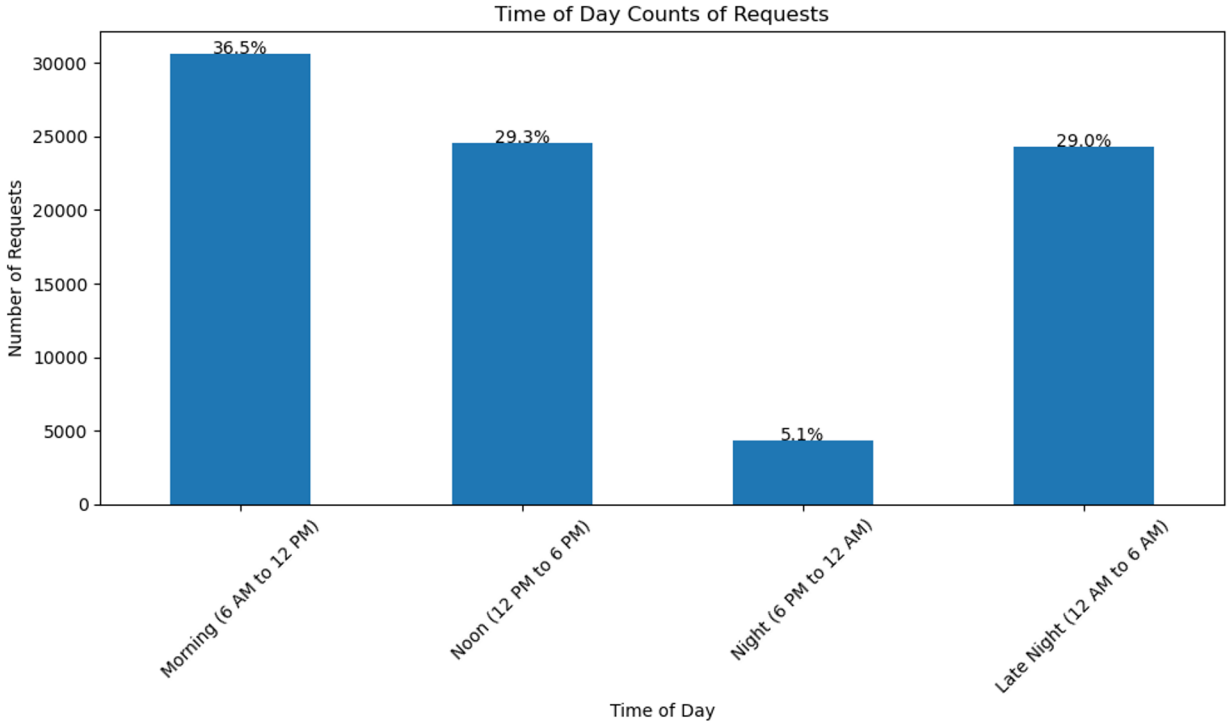
TRENDS:

- Warmer months typically have an increase in complaints.
- Significant decrease from July to December could be due to colder weather, which could lead to a reduction in animal activity and consequently fewer complaints.
- An increase in the request counts from the 2023 data compared to 2022, which could suggest an increase in public awareness campaigns.

ANALYSIS:

- It would be beneficial to examine any concurrent events such as like new city initiatives, or demographic changes.
- Correlating the data with weather patterns, geographic information, or city events could provide more insights into the causes of the trends.


Monthly Counts of Requests - Year 2014
Year 2014
Year 2013 (Year Before)
Year 2015 (Year After)
Number of Requests
100
200
300
400
500
600
700
January
February
March
April
May
June
July
August
September
October
November
December
Month



TRENDS:

- Most reports are received in the morning, but there is also a high peak for late evening
- The number of reports is extremely low during Night time

ANALYSIS:

- When people wake up in the morning they report anything that has occurred overnight
- Late night reports could be due to nocturnal animals, specifically rats.
- Most people are sleeping during the night, which would account for the low report number

Limitations of Data

- Are there places where we are missing complaints or we don't have sufficient documentation?
    - Biased Reporting due to language barrier or unknown service in the area (students)
- Oftentimes if there are requests that are closed because there is not enough information to process it so they have not been completed but are marked as “complete”.
- The data we are analyzing is from “Analyze Boston” (2011-2024), so 2010 data from “Harvard Data” is set up differently and hard to work into our data models

Next Key Questions

- Where are the complaints coming from geographically? Is there any trend to type of animal complaint and area?
    - Grouped by “LOCATION_ZIPCODE” column or “neighborhood_services_district” column
- What kinds of animals are most common in complaints? (Rats? Domesticated pets? Dogs? Cats?)
    - Parse each row similar to how we did to find all animal reports for specific animals (ie Dog, Cat)

Potential Questions We Came Up With

- How many requests were never closed? Is it related to season or zip code?
- If a request gets closed, how many are late at the time of their closing per year?
    - sla_target_dt: > closed_dt: